

Appln. No. 09/228,772
Amendment dated May 27, 2003
Response to Office Action dated January 2, 2003

REMARKS

This Amendment is being filed in response to an Office Action mailed on January 2, 2003. Applicants respectfully request reconsideration of the present application in light of the amendments and remarks set forth herein.

Claims 1-16 are currently pending in the present application. By this Amendment, applicants have amended claims 1, 2, 13, 14 and 16 as well as the specification; specifically, applicants have corrected a typographical error in the specification as suggested by the Examiner, and amended claim 13 to address an informality asserted by the Examiner. Applicants have also amended claims 1, 2, 14 and 16 to more clearly define the applicants' invention and to place the claims in proper condition for allowance. Applicants respectfully submit that no new matter is added by the amendment to the specification and the amendments to the claims set forth herein.

The Objection to the Specification

In the Office Action, the Examiner has objected to the specification due to a certain typographical error. Accordingly, the applicants have amended formula (52) of the specification to correct the typographical error cited by the Examiner whereby obviating the objection. Thus, applicants respectfully request withdrawal of that objection. The applicants submit that no new matter is added by the amendment to the specification.

**The Objection
to Claim 13**

In the Office Action, the Examiner has objected to claim 13 due to an informality. The Examiner asserts that the formula in claim 13 should have a closed parenthesis. The applicants have accepted the Examiner's recommendation and have amended claim 13 by inserting a closed parenthesis in claim 13 whereby obviating the Examiner's objection. Accordingly, applicants respectfully request withdrawal of that objection. Applicants assert that no new matter is added by the amendment to the claim set forth herein.

**The Rejection Under the Judicially
Created Doctrine of Double Patenting**

The Examiner asserts that:

“Claims 1 and 11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 13 of U.S. Patent No. 6,377,682. Although the conflicting claims are not identical, they are not patentably distinct from each other because elimination of method and steps provides no patentable difference. Claims 1 and 11 are encompassed by claims 1 and 13 of U.S. Patent No. 6,377,682. It is well settled that elimination of element and its function is considered to be obvious to one of ordinary skill in the art. *In Re Karlson*, 136 USPQ 184 (CPA 1963).”

Applicants respectfully traverse this rejection.

The Examiner states that a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome this double patenting rejection provided the conflicting patent is shown to be commonly owned with the present application. Applicants assert that a terminal disclaimer is not a viable option in this case because U.S. Patent No. 6,377,682 (“the ‘682

patent”) is assigned to Lucent Technologies Inc., and the present application is now assigned to Agere Systems Inc., a separate entity. Thus, the present application and the asserted patent are not commonly owned which precludes the use of a terminal disclaimer to overcome the double patenting rejection.

However, applicants assert that a terminal disclaimer is not required in this case because the asserted obvious-type double patenting rejection is improper. *MPEP* §804(II)(B)(1)(b) states, “where, through no fault of the applicant, the claims in a later filed application issue first, an obvious-type double patenting rejection is improper, in the absence of a two-way obviousness determination, because the applicant does not have complete control over the rate of progress of a patent application through the Office. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991).” In the present case, U.S. Patent Application No. 09/603,652, which ripened into the ‘682 patent, was originally filed on June 26, 2000 and issued on April 23, 2002. The present application was filed on January 6, 1999, is cited as a reference in the ‘682 patent, and a first office action in the present application was not mailed by the Office until May 9, 2002. Essentially, the application for the ‘682 patent was filed more than eighteen months after the present application and issued as the ‘682 patent several weeks before a first office action in the present application was even mailed from the Office.

Clearly, the fact that the claims in the later filed application issued first is through no fault of the applicants. Accordingly, the asserted obvious-type double patenting rejection is improper. Moreover, “the obviousness-type double patenting rejection is appropriate only if the claims of

the two patents cross-read, meaning that “the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa.”” *In re Dembiczak*, 175 F.3d 994, 1002 (Fed. Cir. 1999) citing *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 939-940 (Fed. Cir. 1983). Accordingly, applicants assert that any two-way obviousness determination in this case is also improper because any distinguishing elements or improvements disclosed in the later filed application were not obvious to one of ordinary skill in the art at the time of the filing of the present application, eighteen months earlier. Since the time between filings is such a long period, it is manifest that any distinguishing elements or improvements disclosed in the later filed application were discovered by the common inventors subsequent to the filing of the present application. As the ‘682 patent sets forth, the ‘682 patent proposes to be an improvement over the instant invention by offering a different approach to obtaining robustness by using a different algorithm solution. The present application does not, as the Examiner contends, merely eliminate a step, but rather uses a different methodology, namely an adaptive scaled non-linearity. There is no teaching or suggestion of such an approach in the present invention, and thus, no two-way (or even one-way) obviousness.

Moreover, in order to advance the prosecution of the present application towards allowance, applicants have amended claim 1 to more clearly define applicants’ invention as recited in claim 1. Applicants assert that no new matter is added by the amendment to claim 1.

Accordingly, in view of the foregoing arguments and the amendment to claim 1, applicants respectfully request withdrawal of this rejection.

The Rejections
Under 35 U.S.C. §103(a)

The Examiner has rejected claims 1 and 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,300 to Romesburg. Applicants respectfully traverse that rejection. The Examiner concedes that the "Romesburg reference does not explicitly disclose adaptive scaled non-linearity", however, the Examiner argues that the described performance of Romesburg performs the same function as an adaptive scaled non-linearity. Applicants respectfully assert that the Examiner's argument is essentially flawed.

The present invention teaches the use of an adaptive scaled non-linearity in a robust adaptive filter to effectuate echo cancellation whereas Romesburg merely identifies the echo problem but fails to teach or suggest the use of an adaptive scaled non-linearity to resolve perturbations introduced by a double talk detector (see col. 5, lines 45-47). Furthermore, Romesburg teaches away from using an adaptive scaled non-linearity because it suggests other methods to solve the problem of fast adaptation and robustness such as a peak-to-baseline device, a scale-offset-and-limit device and a scaling device (see col. 13, lines 58-63). Romesburg does not recognize in any way the need for an adaptive scaled non-linearity since Romesburg teaches that all that is needed to improve echo cancellation is a double-talk detector. Romesburg does not address the problem of errors introduced by the double talk detector. Inasmuch as Romesburg does not even recognize the problem recognized by the Inventors of the

present invention, namely the problem of minimizing the effect of errors introduced by the double-talk detector, there can be no teaching or suggestion in Romesburg of a solution, as is disclosed and claimed by the use of the adaptive scaled non-linearity of the present inventions of claims 1 and 11. Absent some teaching or suggestion in the reference that a problem exists to be solved, an invention recognizing and solving the problem cannot be obvious under §103. See *In re Zurko*, 111 F.3d 887, 890 (Fed. Cir. 1997). To merely argue, as the Examiner has, that the art teaches that robustness and fast convergence are desirable and thus all ways of achieving this aim are obviousness is, respectfully, simply incorrect and unsupportable as a matter of law. Indeed, in light of the Examiner's alleged recognition of this aim, that no one has done it prior to the present applicants is evidence of non-obviousness. "The existence of an enduring, unmet need is strong evidence that the invention is novel, not obvious, and not anticipated. If people are clamoring for a solution, and the best minds do not find it for years, that is practical evidence – the kind that can't be bought from a hired expert, the kind that does not depend on fallible memories or doubtful inferences – of the state of knowledge." *In re Mahurkar Patent Litigation*, 831 F.Supp. 1354, 1377-78, 28 USPQ2d 1801, 1819 (N.D. Ill. 1993), *aff'd.*, 71 F.3d 1573, 37 USPQ2d 1138 (Fed. Cir. 1995).

Thus, applicants respectfully submit that the inventions recited by claims 1 and 11 are not rendered obvious by Romesburg, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 2 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,300 to Romesburg. Applicants respectfully traverse that rejection. The

Examiner asserts that claim 2 is also obvious "since Romesburg further teaches an adaptive filter utilizing a fast converging adaptive algorithm" in addition to performing the same function as an adaptive scaled non-linearity. Applicants restate the above asserted arguments and submit that Romesburg does not teach, suggest and/or even recognize the need for an adaptive scaled non-linearity as claimed, obviating this rejection. The present invention functions to achieve fast convergence, (a general need in the art) through a different solution than that recognized or taught by Romesburg. The arguments set forth above with respect to claim 1 and claim 11 apply equally here. Moreover, in order to advance the prosecution of the present application towards allowance, applicants have amended claim 2 to more clearly define applicants' invention as recited in claim 2. Applicants assert that no new matter is added by the amendment to claim 2. Accordingly, in view of the foregoing arguments with respect to claims 1 and 11 as well as the amendment to claim 2, applicants respectfully submit that the invention recited by claim 2 is not rendered obvious by Romesburg, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,300 to Romesburg. Applicants respectfully traverse that rejection. The Examiner asserts that "Romesburg further teaches the echo canceller of claim 11, further comprising a double-talk detector connected to the telephone circuit for disabling the update device in response to the detection of double talk on the circuit." Applicants restate the above asserted arguments and submit that Romesburg does not teach, suggest and/or recognize the need for an adaptive scaled non-linearity as claimed, obviating this rejection. Moreover, in the present

application, claim 12 depends from claim 11. Consequently, the rejection of claim 12 should be withdrawn by the Examiner because claim 12 depends from an allowable claim. Thus, applicants respectfully submit that the invention recited by claim 12 is not rendered obvious by Romesburg, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claims 3 and 4 under 35 U.S.C. §103(a) as being unpatentable over Romesburg in view of U.S. Patent No. 5,951,626 to Duttweiler. Applicants respectfully traverse that rejection. In the first instance, there is no teaching or suggestion in the references to make the hypothetical combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) ("the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device"). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction, the Federal Circuit has stated that, "virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer]

may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention.” *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg, Duttweiler only teaches an adaptive filter that the fast converging algorithm is PNLMS, in order to distribute adaptive energy evenly across the tap. Duttweiler does not teach an adaptive scaled non-linearity for modifying the adaptive coefficients or the use of a double-talk detector with an adaptive filter employing such adaptive scaled non-linearity. Thus, the shortcomings of Romesburg, as set forth in detail above, are in no way overcome by the disclosure of Duttweiler. There is simply no teaching or suggestion in the references to support making the Examiner’s hypothetical combination. *C.R. Bard*, *infra*. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.” Thus the combination is improper. Moreover, in the present application, claims 3 and 4 depend from claim 2. Applicants have amended claim 2 to add an additional limitation, namely, a double-talk detector, in order to advance prosecution of the present application towards allowance. Consequently, the rejection

of claims 3 and 4 should be withdrawn by the Examiner because claims 3 and 4 depend from an allowable claim. Thus, applicants respectfully submit that the invention recited by claims 3 and 4 is not rendered obvious by the Examiner's proposed combination of Romesburg and Duttweiler, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Romesburg in view of U.S. Patent No. 5,428,562, to Gay. Applicants respectfully traverse that rejection. In the first instance, there is no teaching or suggestion in the references to make the hypothetical combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) ("the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device"). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction, the Federal Circuit has stated that, "virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer] may often find

every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention.” *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg, Gay only teaches an adaptive filter that the fast converging algorithm is APA (see col. 2, lines 53-65) in order to achieve fast convergence through sample-by-sample updating with low complexity (see col. 1, lines 46-47). Gay does not teach an adaptive scaled non-linearity for modifying the adaptive coefficients or the use of a double-talk detector with an adaptive filter employing such adaptive scaled non-linearity. Further, the shortcomings of Romesburg, as set forth in detail above, are in no way overcome by the disclosure of Gay. There is simply no teaching or suggestion in the references to support making the Examiner’s hypothetical combination. *C.R. Bard*, *infra*. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.” Thus the combination is improper. Moreover, in the present application, claim 5 depends from claim 2. Consequently, the rejection of claim 5 should be withdrawn by the Examiner because claim 5 depends from an allowable claim. Thus, applicants respectfully

submit that the invention recited by claim 5 is not rendered obvious by the Examiner's proposed combination of Romesburg and Gay, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over Romesburg in view of U.S. Patent No. 6,137,881, to Oh et al. Applicants respectfully traverse that rejection. In the first instance, there is no teaching or suggestion in the references to make the hypothetical combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) ("the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device"). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction, the Federal Circuit has stated that, "virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer] may often find every element of a claimed invention in the prior art. If identification of each claimed element in

the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention.” *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg, Oh merely teaches an adaptive filter wherein the fast converging algorithm is PAPA (see col. 2, line 47-col. 3, line 17) in order to improve the numerical stability of the filter algorithm (see col. 1, lines 48-49). Oh does not teach an adaptive scaled non-linearity for modifying the adaptive coefficients or the use of a double-talk detector with an adaptive filter employing such adaptive scaled non-linearity. Further, the shortcomings of Romesburg, as set forth in detail above, are in no way overcome by the disclosure of Oh. There is simply no teaching or suggestion in the references to support making the Examiner’s hypothetical combination. *C.R. Bard*, infra. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.” Thus the combination is improper. Moreover, in the present application, claim 6 depends from claim 2. Consequently, the rejection of claim 6 should be withdrawn by the Examiner because claim 6 depends from an allowable claim. Thus, applicants respectfully submit that the invention recited by claim 6 is not rendered obvious by the Examiner’s proposed

combination of Romesburg and Oh, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claims 7-8 and 9-10 under 35 U.S.C. 103(a) as being unpatentable over Romesburg in view of Duttweiler further in view of U.S. Patent No. 5,790,440, to Fujii et al, and further in view of Kim and Efron ("Adaptive Robust Impulse Noise Filtering," IEEE Transaction on Signal Processing, Vol. 43, No. 8, pp. 1855-1866, August 1995). Applicants respectfully traverse that rejection. Respectfully, the sheer number of references needing to be combined demonstrates the manifest impropriety of the combination. Also, there is no teaching or suggestion in any of the references to make the hypothetical four-reference combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) ("the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device"). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction,

the Federal Circuit has stated that, “virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer] may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention.” *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg and Duttweiler, Fujii fails to teach an adaptive scaled non-linearity for modifying the adaptive coefficients or the use of a double-talk detector with an adaptive filter employing such adaptive scaled non-linearity. Applicants agree that Fujii does teach the use of a sign function. However, the sign function of Fujii is not the scaled non-linearity as claimed. Further, the shortcomings of Romesburg, as set forth in detail above, are in no way overcome by the disclosures of Duttweiler and/or Fujii. There is simply no teaching or suggestion in the references to support making the Examiner’s hypothetical combination. *C.R. Bard, infra. See also In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.” Thus the combination is improper. Moreover, in addition to the arguments set forth above with respect to Romesburg,

Duttweiler and Fujii, Kim and Efron ("Kim") fail to teach an adaptive scaled non-linearity for modifying the adaptive coefficients in the same environment as the present invention. More specifically, Kim proposes the use of an adaptive scaled non-linearity in a different signal environment than that of the present invention. Applicants are the first to recognize that the use of a double-talk detector creates an error distribution that would benefit from an adaptive scaled non-linearity, a recognition totally absent in Kim.

Furthermore, the shortcomings of Romesburg, Duttweiler and Fujii as set forth in detail above, are in no way overcome by the disclosure of Kim and Efron. There is simply no teaching or suggestion in the references to support making the Examiner's hypothetical combination. *C.R. Bard, infra*. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, "the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness." Thus the combination is improper. Thus, applicants respectfully submit that the inventions recited by claims 7-8 and 9-10 is not rendered obvious by the Examiner's proposed combination of Romesburg, Kim and Efron, Duttweiler, and Fujii, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 13 under 35 U.S.C. 103(a) as being unpatentable over Romesburg in view of Oh, Linebarger, Priest, and Raghothaman ("A Fast Affine Projection Algorithm for an Acoustic Echo Canceller using a Fixed-Point DSP Processor," ICASSP IEEE Int. Conf. Acoustics, Speech, and Signal Processing, 1997, pp. 4121-4124), further in view of Fujii and further in view of Kim and Efron. Applicants respectfully traverse that rejection.

Respectfully, the sheer number of references needing to be combined demonstrates the manifest impropriety of the combination. Also, there is no teaching or suggestion in any of the references to make the hypothetical four-reference combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) ("the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device"). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction, the Federal Circuit has stated that, "virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer] may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the

patentability of the claimed invention.” *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg, Fujii and Kim and Efron, Oh fails to teach the equation presented in claim 13, contrary to the Examiner’s assertion. Applicants assert that the equation disclosed in claim 13 contains a specific waiting matrix which is not present in the Oh equation, as evidenced by comparison of the two. Further, the shortcomings of Romesburg, Fujii, and Kim and Efron, as set forth in detail above, are in no way overcome by the disclosures of Oh. There is simply no teaching or suggestion in the references to support making the Examiner’s hypothetical combination. *C.R. Bard*, infra. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.” Thus the combination is improper. Thus, applicants respectfully submit that the invention recited by claim 13 is not rendered obvious by the Examiner’s proposed combination of Romesburg, Fujii, Kim and Efron, and Oh, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,300 to Romesburg. Applicants respectfully traverse that rejection. The Examiner asserts that “Romesburg further teaches the echo canceller of claim 13, further comprising a double-talk detector connected to the telephone circuit for disabling the update

device in response to the detection of double talk on the circuit.” In the first instance, Applicants have amended claim 14 to put claim 14 in proper form for allowance. Applicants submit that no new matter is added by the amendment to claim 14. Furthermore, applicants restate the above asserted arguments and submit that Romesburg does not teach, suggest and/or even recognize the need for an adaptive scaled non-linearity, obviating this rejection. Moreover, in the present application, claim 14 depends from claim 13. Consequently, the rejection of claim 14 should be withdrawn by the Examiner because claim 14 depends from an allowable claim. Thus, applicants respectfully submit that the invention recited by claim 14 is not rendered obvious by Romesburg, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 15 under 35 U.S.C. 103(a) as being unpatentable over Romesburg in view of Oh, Linebarger, Priest, and Raghothaman (“A Fast Affine Projection Algorithm for an Acoustic Echo Canceller using a Fixed-Point DSP Processor,” ICASSP IEEE Int. Conf. Acoustics, Speech, and Signal Processing, 1997, pp. 4121-4124), further in view of Fujii and further in view of Kim and Efron. Applicants respectfully traverse that rejection. Respectfully, the sheer number of references needing to be combined demonstrates the manifest impropriety of the combination. Also, there is no teaching or suggestion in any of the references to make the hypothetical four-reference combination proposed by the Examiner, and thus the combination is improper. See *C.R. Bard Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998) (“the legal conclusion of obviousness requires that there be some suggestion, motivation or teaching in the prior art whereby the person of ordinary skill would have selected the

components that the inventor selected and used them to make the new device”). Applicants further respectfully traverse the cited hypothetical combination of references on grounds that the proposed combination involves impermissible hindsight reconstruction of the invention, involving "picking and choosing" from the teachings of multiple references. "Care must be taken to avoid hindsight reconstruction by using the application as a guide through the maze of prior art references combining the right references in the right way so as to achieve the result of the claims in suit." *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). Moreover, regarding hindsight reconstruction, the Federal Circuit has stated that, "virtually all [inventions] are combinations of old elements. Therefore, an Examiner [or accused infringer] may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention." *Yamanouchi Pharmaceutical v. Danbury Pharmacal*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) citing *In re Rouffet*, 149 F.3d 1350, 1357-58 (Fed. Cir. 1998).

In addition to the arguments set forth above with respect to Romesburg, Fujii and Kim and Efron, applicants reassert that Oh fails to teach the equation presented in claim 15, contrary to the Examiner's assertion. Applicants assert that the equation disclosed in claim 15 contains a

specific waiting matrix which is not present in the Oh equation, as evidenced by comparison of the two. The shortcomings of Romesburg, Fujii, and Kim and Efron, as set forth in detail above, are in no way overcome by the disclosure of Oh. There is simply no teaching or suggestion in the references to support making the Examiner's hypothetical combination. *C.R. Bard*, infra. See also *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998) which states, "the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness." Thus the combination is improper. Thus, applicants respectfully submit that the invention recited by claim 15 is not rendered obvious by the Examiner's proposed combination of Romesburg, Fujii, Kim and Efron, and Oh, and applicants respectfully request withdrawal of that rejection.

The Examiner has rejected claim 16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,300 to Romesburg. Applicants respectfully traverse that rejection. The Examiner asserts that "Romesburg further teaches the echo canceller of claim 15, further comprising a double-talk detector connected to the telephone circuit for disabling the update device in response to the detection of double talk on the circuit." In the first instance, applicants have amended claim 16 to put claim 16 in proper form for allowance. Applicants submit that no new matter is added by the amendment to claim 16. Furthermore, applicants restate the above asserted arguments and submit that Romesburg does not teach, suggest and/or recognize the need for an adaptive scaled non-linearity, obviating this rejection. Moreover, in the present application, claim 16 depends from claim 15. Consequently, the rejection of claim 16 should be

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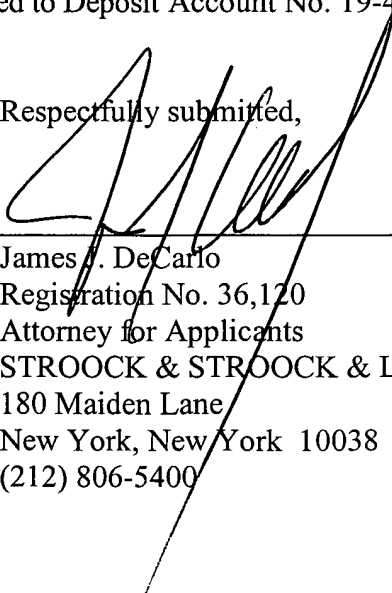
withdrawn by the Examiner because claim 16 depends from an allowable claim. Thus, applicants respectfully submit that the invention recited by claim 16 is not rendered obvious by Romesburg, and applicants respectfully request withdrawal of that rejection.

Applicants respectfully request reconsideration of the present application in view of the amendments to the specification and the claims as well as in light of the remarks provided herein.

Early and favorable consideration of the present application in view of the amendments to the claims and remarks provided herein is respectfully requested. If the Examiner is not in a position to allow all claims as presently amended, the Examiner is urged to call the undersigned attorney at 212-806-5400.

Any additional fees or charges required at this time and in connection with the present application are hereby authorized to be charged to Deposit Account No. 19-4709.

Respectfully submitted,



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